

AMENDMENTS TO THE CLAIMS

Claims 1-12 (Cancelled)

13. (Currently Amended) A process for the manufacture of a [tube] tubular product from a billet made of a magnesium alloy, [the process] comprising the steps of:

disposing a billet, made of a magnesium alloy,
within a container of an extrusion press having a ram;
operatively associating a die, having a predeterminedly configured aperture defined therein, with said container;

disposing a mandrel within said aperture of said die such that an annular space is defined between an internal surface portion of said die aperture and an external surface portion of said mandrel;

[(a)] heating [the] said billet to a predetermined temperature that is within [a] the range of 300°C to 605°C;
and

[(b)] extruding [the] said billet, [using an extrusion press having a ram, an internal piercing mandrel, and a die,] while maintaining the temperature of [the] said billet [to stay] within [the] said temperature range of 300°C to 605°C[; and (c)] by applying a force to [the] said billet so that it is forced through said annular space defined between [the] said die and [the] said mandrel at a predetermined extrusion speed of [the ram] between 5 mm/sec and 45 mm/sec so as to form a [tube] tubular product having a predetermined extrusion reduction ratio[; wherein the extrusion speed is substantially between 5 mm/sec and 45 mm/sec, and the extrusion reduction ratio] which is substantially between 10:1 and 50:1.

14. (Currently Amended) [A] The process according to Claim 13, wherein:

said [the] magnesium alloy is selected from the group consisting of AM60, AS41, AZ31, AZ61, AZ80, AZ91, ZE41, and ZM21.

15. (Currently Amended) [A] The process according to Claim 14, wherein:

said [the] extrusion reduction ratio is substantially 30:1, said [the] extrusion speed is substantially 15 mm/sec, said [the] predetermined temperature is substantially 300°C, and [the AZ31] said magnesium alloy is [used] AZ31.

16. (Currently Amended) [A] The process according to Claim 14, wherein:

[the] said magnesium alloy comprises 2,856% aluminum, 1.022% zinc, 0.329% manganese, 0.004% iron, 0.038% silicon, 0.001% copper, and 0.001% nickel.

17. (Currently Amended) [A] The process according to Claim 14, [wherein the process] further [comprises] comprising the step of:

annealing [the] said [tube] tubular product.

18. (Currently Amended) [A] The process according to Claim 17, [wherein] further comprising the step of:

[the tube] annealing said tubular product [is annealed] at a temperature of 300°C for six hours.

19. (Currently Amended) [A] The process according to Claim 13, further comprising the steps of:

[(d)] cooling [the tube] said tubular product at a first predetermined [first] cooling temperature for a first predetermined [amount] period of time;

[(e)] sealing [the tube from] said tubular product at both ends;

positioning said tubular product within a mold having a guiding zone at a predetermined guiding temperature and an expansion zone having a predetermined configuration at a predetermined expansion temperature;

[(f)] introducing a pressure medium into [the tube] said tubular product;

[(g)] positioning the tube said tubular product within a mold having a guiding zone at a predetermined guiding temperature and an expansion zone of a predetermined

shape configuration at a predetermined expansion temperature;]

[(h)] applying an axial [compression] compressive force [on the tube] to opposite ends of said tubular product so that a section of [the tube] said tubular product, located within [the] said expansion zone expands so as to conform to [the] said predetermined [shape] configuration of said expansion zone; and

[(i)] cooling [the tube] said tubular product at a second predetermined [second] cooling temperature for a second predetermined [amount] period of time.

20. (Currently Amended) [A] The process according to Claim 19, wherein:

[the] said expansion temperature within said expansion zone is substantially between 200°C and 500°C.

21. (Currently Amended) [A] The process according to Claim 19, wherein:

[the] said pressure medium is a gas.

22. (Currently Amended) [A] The process according to Claim 21, wherein:

[the] said gas does not react with the metal under the conditions used within [the] said process.

23. (Currently Amended) [A] The process according to Claim 19, wherein:

[the] said pressure medium comprises a heat resistant liquid.

24. (New) The process according to Claim 19, wherein:

said temperature within said guiding zone is between 100°C and 200°C.

25. (New) The process according to Claim 18, wherein:
when said tubular product is annealed for a maximum period of six hours, fine-grained structure may be observed within said tubular product wherein the grain size is between 10 μ m and 50 μ m.